Proteomic profile of necrotrophic mycelium of *Moniliophthora perniciosa*

Gomes, DS[1]; Rosa, ECA[1] ; Corbeau, C[2]; Carvalho, HAS[1]; Camillo, LR[1]; Pirovani, CP[1]; Micheli, F[1,3]

[1]CBG, UESC, BA, Brazil, 45662-000; [2]Université Paris-Sud 11, Françe ; [3]Cirad, UMR DAP, France.

**E-mail: daygenes@yahoo.com.br*

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The fungus *Moniliophthora perniciosa*, the etiologic agent of witches' broom disease of cacao (*Theobroma cacao* L.), has a hemibiotrophic life cycle, with a biotrophic phase and a necrotrophic phase. The biotrophic phase, initiating the disease, is characterized by a monokaryotic mycelium, while the necrotrophic phase is characterized by a dikaryotic mycelium leading to plant death. During the culture of *Mp* on cookies, six different developmental phases were observed according to the mycelium color or the organ produced: white (≈ 35 days), yellow (≈ 37 days), pink (≈ 40 days), dark pink (≈ 45 days), primordium (≈ 60 days) and basidiocarp (≈ 75 days). In this study, we identify proteins involved in each stage of the fungus development focusing on basidiocarp formation. Proteins were extracted using the ADP method, followed by a simple cleaning using SDS-dense and phenol. The quantification was made using the 2-D quantification kit. The proteins were extracted in triplicate and separated using a 12% bi-dimensional SDS-PAGE gel. The 2-D maps showed approximately 300 spots per gel, and present differential protein expression patterns. Spots were cut from gels and analyzed by mass spectrometry. At the basidiocarp stage, we identified several proteins potentially involved in its formation, which may be good candidates for further analysis required to understand the mode of spread of the fungus. To our knowledge this is the first work analyzing *Mp* development by proteomics.

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